AMENDMENTS TO THE SPECIFICATION

At page 2, amend lines 15-23 as follows:

~~[* This section basically paraphrases the claims.]~~

[**0006**] This invention provides novel imaging reagents that are capable of crossing the blood-brain barrier *in vivo,* and entering brain cells in sufficient concentration that they can be readily detected using standard detection methods. In preferred embodiments, the imaging reagent comprises a nucleic acid that specifically hybridizes to a gene or gene product (*e.g.* an mRNA) attached to a targeting ligand that is capable of binding a receptor on a cell comprising the blood brain barrier and crossing the blood brain barrier. The imaging reagent also bears a detectable label, *e.g.* attached directly or indirectly to the nucleic acid (*e.g.* attached directly to the nucleic acid, attached to the targeting ligand, *etc.*).

AMENDMENTS TO THE CLAIMS

Claim 1 (Currently amended): A method of imaging *in vivo* expression of a gene in a brain cell of a vertebrate, said method comprising:

i) administering to said vertebrate an imaging reagent comprising a detectable label attached to a first nucleic acid that specifically hybridizes to a second nucleic acid transcribed from said gene, where said first nucleic acid is linked to a targeting ligand that binds a receptor on ~~a~~ cells ~~cell composing~~ comprising the blood brain barrier of said vertebrate, whereby said ~~composition~~ imaging reagent crosses said blood brain barrier and enters a brain cell and said first nucleic acid specifically hybridizes to said second nucleic acid; and

ii) detecting the presence or quantity of a signal produced by said detectable label in said brain cell where the presence or quantity of said label indicates the presence or quantity of said nucleic acid transcribed from said gene.

Claim 2 (Original): The method of claim 1, wherein said first nucleic acid is a peptide nucleic acid (PNA).

Claim 3 (Currently amended): The method of claim 1, wherein said targeting ligand is selected from the group consisting of an antibody that specifically binds to a receptor on cells ~~a cell composing~~ comprising the blood brain barrier, and a substrate specifically bound by a receptor on cells ~~a cell~~ comprising the blood brain barrier.

Claim 4 (Original): The method of claim 3, wherein said targeting ligand is selected from the group consisting of insulin, transferrin, insulin-like growth factor I (IGF-I), insulin-like growth factor II (IGF-II), basic albumin, leptin, and prolactin.

Claim 5 (Original): The method of claim 3, wherein said targeting ligand is an antibody that specifically binds to a receptor selected from the group consisting of an insulin receptor, a transferrin receptor, an insulin-like growth factor I (IGF-IR) receptor, and insulin-like growth factor II receptor (IGF-IIR), and a leptin receptor.